


# O<sub>2</sub> release from PCC7942

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 An abbreviated version of this protocol was published in Science Advances in May 2020

Dissolved oxygen from microalgae-gel patch promotes chronic wound healing in diabetes

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## Detailed protocol

1. The *S. elongatus* PCC7942 were incubated in BG-11 liquid medium in 150-ml conical flasks under 12 h light/dark conditions.
2. PCC7942 was collected by centrifugation at 8000 rpm for 5 min during its logarithmic phase.
3. The supernatants were removed and then the precipitates were repeatedly washed three times with phosphate-buffered saline (PBS).
4. The precipitates were redispersed in PBS with 500  $\mu$ M Na<sub>2</sub>CO<sub>3</sub>.
5. PCC7942 ( $1 \times 10^9$  cells/ml) solution was added into a penicillin bottle and exposed to a 620- to 660-nm near-infrared light-emitting diode (NIR LED) at 0.5 W/cm<sup>2</sup> power density.
6. The O<sub>2</sub> concentration of PCC7942 were measured by the oxygen electrodes (OX-N-904151, Unisense).

**How to cite:** (Readers should cite both the Bio-protocol preprint and the original research article where this protocol was used)

1. Chen, H. (2020). O<sub>2</sub> release from PCC7942. Bio-protocol Preprint. [bio-protocol.org/prep375](https://bio-protocol.org/prep375).
2. Chen, H., Cheng, Y., Tian, J., Yang, P., Zhang, X., Chen, Y., Hu, Y. and Wu, J. (2020). Dissolved oxygen from microalgae-gel patch promotes chronic wound healing in diabetes. Science Advances 6(20). DOI: [10.1126/sciadv.aba4311](https://doi.org/10.1126/sciadv.aba4311)

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